of the scapula. His face was flushed, his pulse quick and throbbing, and he could not lie down.

There was a recent cicatrix about an inch above the interclavicular space, which felt much indurated, and my impression at the time was, that the tracheal cartilages had been lacerated, and had united very unequally. Mr. Hunt bled him to 12 ounces from a large orifice, and complete syncope followed. When he recovered from the fainting, the breathing was much freer, and he felt relieved. He was treated with mercurials, hyoscyamus, and common aperients, and continued improving, but the fixed pain in the thorax did not entirely subside.

A week afterwards he called on Mr. H., and stated that something had made its appearance in the situation of the wound. Upon examination, Mr. H. found the cicatrix ulcerated, so as to expose a black angular metallic substance which was so impacted as to require careful dissection for its removal. It proved then to be a knife-blade $2\frac{6}{10}$ inches long, $\frac{7}{10}$ inches wide, and $\frac{1}{10}$ inches thick at back. When the blade was withdrawn, it apparently rested obliquely against the body of one of the cervical vertebræ, and its back was directed backwards and upwards. The bluntness of this point and of the edge of the knife will account for the carotid and other important structures so fortunately having escaped being injured.

An opiate was given, rest and an antiphlogistic regimen enjoined, and in ten days he perfectly recovered.—*Ibid.*, 24th April, 1844.

35. *Intra-capsular Fracture of the neck of the Thigh-Bone.*—Mr. WILLIAMS exhibited to the Surgical Society of Ireland, April 27, 1844, the femur of a patient aged 52, who had been admitted into the City of Dublin Hospital with intra-capsular fracture of the neck of that bone, and had lived exactly sixteen days after the accident. He had died in consequence of disease of the thoracic viscera, having been affected with unusually extensive emphysema of both lungs, general bronchitis, and several tubercular cavities towards the apex of each lung. On laying open the joint, it was observed that there was very little synovia indeed in the interior of the joint, but it would be there seen that the secretion of synovia was replaced by the secretion of organizable and organized lymph which coated the entire articular surface of the capsular ligament. This lymph was firm, adhered closely to the ligament, and was vascular throughout, though more highly organized in some situations than in others; but this lymph, and this he (Mr. Williams) thought particularly interesting, was also adherent at several points to the neck and head of the femur. Those adhesions, it was true, were not very firm, and in the manipulations necessary for inspecting the interior of the joint, they had been detached, but nevertheless, traces of their existence could still be recognized. The situation in which the capsular ligament adhered through the medium of this lymph most extensively and most firmly to the bone was at some points of the broken edge of the inferior fragment, especially anteriorly, to the extent of a quarter of an inch, and at this point the broken edge of the bone was rounded and smooth, contrasting strongly with the rough sharp edge of the bone in the situations where no such adhesions had existed. On placing the capsular ligament *in situ*, it would be observed that the situations in which the lymph that coated its inner surface was most abundant and most vascular, were precisely the points at which it adhered to the bone. The capsular ligament, independently of being thus lined with lymph, was somewhat thickened; in fact, it seemed to have acted the part that the periosteum often, perhaps, usually acts in fractures of the shafts of the long bones. With respect to the fracture itself, it was entirely intra-capsular, and ran in the direction which he thought these fractures very usually did. It commenced very near the head of the femur, and ran in a slightly curved line from above downwards, and from within outwards, until it arrived at the compact structure of the neck of the femur inferiorly, where it ran very obliquely outwards and downwards, thus leaving attached to the upper fragment in this situation a sharp wedged-shaped piece of the compact tissue of the bone which

seemed to project against and almost threaten to tear the capsular ligament of the joint at its most depending point. The reflected ligament that covers the neck of the femur was but partially torn through, indeed about one-half of it on the inferior and posterior aspect of the neck of the femur remained intact. There were no adhesions between this reflected ligament and the capsular ligament. On inspecting the broken surfaces of the bone, it would be seen that they were both highly vascular, and there really seemed to be little, if any, difference in this respect between the surface of the lower and that of the upper fragment, at least so far as could be at present determined, for he had abstained from separating them so as to examine them fully, lest he might completely destroy what he considered it very interesting to see—several shreds of lymph which passed between the opposed broken surfaces, perpendicular to and adherent to both surfaces—several of these thread-like bands of lymph had been unavoidably broken, but some of them were still distinctly seen on gently separating the edges of the fracture. This appearance showed that a thin layer of lymph had been effused between the opposed surfaces of the fracture, on separating which it was drawn out into the thin bands or threads then seen. The investing cartilage of the head of the femur showed slight recent absorption at some points, especially anteriorly, and it was at these points that the capsular ligament, as already observed, had been adherent, though very feebly, it was true, to the head of the bone. The round ligament was unusually large and very vascular. From the appearances in the joint, Mr. Williams thought that this was a case in which perfect bony union of an intracapsular fracture of the neck of the femur might very probably have ultimately taken place under more favourable circumstances; at all events, it could scarcely be doubted that, had the patient lived, most useful union would have occurred. He might say just thus much with reference to the history of the case, that the patient walked thirty or forty yards after the accident, yet the fracture was not impacted, but had the joint been examined at a remote period, when union, whether bony or not, had occurred, it would, he thought, be pronounced to have been an impacted fracture. In order to have a term of comparison, the opposite femur had been removed, and in both bones similar senile alterations had evidently commenced, the neck of the femur being shorter than natural, and on the unbroken bone (though not on the fractured one) the cartilage of incrustation was beginning to sustain senile absorption or *usure* at two distinct points. The patient, however, had not suffered from pain in either hip, or been lame prior to the accident, probably because the commencing affection of the cartilage occupied not the upper part of the head of the femur, but the anterior part, where it was subject to little pressure. The attempts at reparation in this case did not depend on any particular care having been taken in the treatment of the fracture; for the first two days splints were applied, but the embarrassment of respiration then rendered it imperative to remove the apparatus in order to allow the patient to sit up and have his position frequently changed.

The fracture had been caused by a fall directly on the most prominent point of the trochanter major.

This case disproves one of the positions on which a recent writer, M. Rodet, lays great stress. He maintains that intra-capsular fractures only occurred from violence applied in the direction of the axis of the femur, as in falls on the foot, or from what he terms antero-lateral falls, in which the anterior part of the great trochanter comes on the ground; that if the fall be postero-lateral, the fracture will be mixed, or both within and without the capsular ligament; but that direct lateral falls must produce extra-articular fractures. The direction of the violence was to be ascertained, not merely from the account of the patient, but by examining the hip, and ascertaining the exact situation of any contusion which M. Rodet deemed a certain sign of the nature of the fracture. Now, in this case the fracture had been regarded as intracapsular on the patient's admission into the hospital, and especial care had been taken to examine the hip, with reference to the views of M. Rodet, whose paper he (Mr. Williams) had shortly before read: there was little contusion, though the trowsers were torn; but still there was a distinct abrasion of the skin over the most prominent and external part of the trochanter major; and if there was any deviation whatever from a directly lateral fall, the deviation must have been slightly posteriorly, as the man's trowsers were covered with dust behind the torn part; but this probably arose from his having rolled backwards after the fall. The patient himself could not say whether he had fallen backwards or a little forwards, or exactly on his side; but the contusion which M. Rodet regarded as a diagnostic sign was there, and showed that the force was applied in a direction which he maintained must produce an extra-articular fracture, and yet dissection showed that the fracture was completely intracapsular, and thus this case clinically disproved M. Rodet's very ingenious, geometrical, and mechanical speculations, and deprived his alleged diagnostic sign of all its value. It might be said that the neck of the bone was somewhat altered in this case, and that M. Rodet admitted that such alteration might modify the results; but then in many, perhaps in most cases of fractured neck of the femur, the bone was altered, at least as much as in this instance, so that M. Rodet's sign thus again lost its value. As to there being no synovia in the joint, it was necessary to mention that circumstance, both as it was the fact, and because many eminent men mentioned inordinate secretion as the constant result of intracapsular fractures in the early stages of the accident.—*Dublin Med. Press*, May 15th, 1844.

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36. *Process of reparation of fractured bone.* Mr. WILLIAMS exhibited to the Surgical Society of Ireland March 30, a preparation which he conceived to be interesting as affording an opportunity of examining a simple fracture during the process of reparation and besides illustrating one or two points of some importance. The subject of the accident was an old man, aged about seventy, emaciated and apparently of feeble constitution. The fracture was the result of direct violence, having been caused by the wheel of a car passing over the left femur, which was fractured at, or rather a little below, the point of junction of the middle and lower third of the shaft of the bone. He was brought to the City of Dublin Hospital on the 20th of January, and died on the 18th March, so that he lived fifty-seven days from the receipt of the injury; after such a period the formation of callus would, in a younger person, have been probably seen in a more advanced stage; but before drawing the attention of the society to the appearances actually exhibited in the preparation, it would be well to state, very briefly, some of the more prominent circumstances connected with the case during life. It was quite unnecessary to give any thing like a detail of the case; but a few observations were necessary. Thus it would be observed that the broken extremities of the bones overlapped each other considerably, to the extent, indeed, of nearly three inches. The reason of this was, that seeing the advanced age and debility of the patient, no attempt was made to treat the fracture by permanent extension in the straight position of the limb. The limb was, in the first instance, placed on the double inclined plane, and every possible care was taken to prevent the formation of bed-sores; the patient was, after the first few days, when the swelling and tension of the thigh had subsided, supported in the sitting posture on the side of the bed, the limb on the inclined plane being carefully slid out on a platform, and as a sore, nevertheless, began to form over the sacrum, and gangrenous phlyctenæ appeared on the toes of both feet, of the uninjured as well as of the fractured limb, he was soon transferred to Dr. Arnott's hydrostatic bed, but ultimately died in consequence of extensive sloughing over the sacrum. Had any attempt therefore been made to permanently reduce and coapt the fracture in the usual way, the fatal termination of the case would have been greatly accelerated, and hence the very considerable degree of overlapping observable in the present case. About fourteen hours after death the limb was examined. There were some remains of ecchymosis between the integuments and fasci lata on the front and external surface of the limb; the muscles presented a natural appearance, except in the immediate vicinity of the fracture, where they were still slightly infiltrated with blood. The fracture was oblique from above downwards, and from before backwards, and slightly from